

Title (en)  
BIO-OIL UPGRADING PROCESS

Title (de)  
VERFAHREN ZUR VERBESSERUNG EINES BIOÖLS

Title (fr)  
PROCÉDÉS DE VALORISATION D'HUILE BIOLOGIQUE

Publication  
**EP 2714269 A2 20140409 (EN)**

Application  
**EP 12793407 A 20120524**

Priority  
• US 201161493099 P 20110603  
• US 2012039388 W 20120524

Abstract (en)  
[origin: WO2012166530A2] A method for upgrading pyrolysis oil into a hydrocarbon fuel involves obtaining a quantity of pyrolysis oil, separating (130) the pyrolysis oil into an organic phase and an aqueous phase, and then upgrading (160) the organic phase into a hydrocarbon fuel by reacting the organic phase with hydrogen gas using a catalyst. The catalyst used in the reaction includes a support material, an active metal and a zirconia promoter material. The support material may be alumina, silica gel, carbon, silicalite or a zeolite material. The active metal may be copper, iron, nickel or cobalt. The zirconia promoter material may be zirconia itself, zirconia doped with Y, zirconia doped with Sc and zirconia doped with Yb.

IPC 8 full level  
**B01J 23/72** (2006.01); **B01J 21/08** (2006.01); **B01J 23/46** (2006.01)

CPC (source: EP US)  
**B01J 23/70** (2013.01 - EP US); **B01J 23/72** (2013.01 - EP US); **B01J 23/83** (2013.01 - EP US); **B01J 35/40** (2024.01 - EP US); **B01J 35/613** (2024.01 - EP US); **B01J 37/0036** (2013.01 - EP US); **B01J 37/0201** (2013.01 - EP US); **B01J 37/04** (2013.01 - EP US); **C10G 3/44** (2013.01 - EP US); **C10G 3/49** (2013.01 - EP US); **C10G 3/52** (2013.01 - EP US); **C10L 1/18** (2013.01 - US); **B01J 21/08** (2013.01 - EP US); **Y02P 30/20** (2015.11 - EP US)

Citation (search report)  
See references of WO 2012166530A2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2012166530 A2 20121206**; **WO 2012166530 A3 20130228**; EP 2714269 A2 20140409; US 2012304530 A1 20121206; US 2014331545 A1 20141113

DOCDB simple family (application)  
**US 2012039388 W 20120524**; EP 12793407 A 20120524; US 201213479057 A 20120523; US 201414321520 A 20140701